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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/437,584	11/09/1999	MICHAEL HOWARD	MS1-379US	8187

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EXAMINER

HENEGHAN, MATTHEW E

ART UNIT	PAPER NUMBER
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2134

DATE MAILED: 05/05/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/437,584

Applicant(s)

HOWARD ET AL.

Examiner

Matthew Heneghan

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 March 2004 has been entered.

2. Claims 1, 7, 13, 18, 22, and 26 have been amended in response to the second office action. Claims 1-31 have been examined.

Drawings

3. The drawings were received on 24 March 2004. These drawings are acceptable.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for determining an attack pattern in general, does not reasonably provide enablement for determining whether an attack pattern is a disclosure attack, integrity attack, and/or a denial of service attack. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. For purposes of the prior art search, it is being presumed that any disclosure of checking a URL for one of the specified attacks is sufficient.

Regarding claims 1, 7, 13, 18, 22, and 26, although the specification does supply a description of each of these types of attacks, there is no disclosure as to how particular patterns would be usable for making the determination that a pattern, in fact, conformed to any one of these specific types of attacks.

All other claims depend from the rejected claims, and include all the limitations of those claims, thereby rendering those dependent claims as not enabling.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-17 and 22-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 7, 13, 22, and 26, the term "...content that is designed to constitute..." renders the claims indefinite because it makes it unclear as to whether

the content must actually be one of the enumerated types of attack patterns. For purposes of the prior art search, it is being presumed that the pattern being search for is in fact one of the listed types of patterns.

Claims 2-6, 8-12, 14-17, 23-25, and 27-31 depend from rejected claims 1, 7, 13, 22, and 26 and include all the limitations of those claims, thereby rendering those dependent claims indefinite.

Claim Rejections - 35 USC § 103

6. Claims 1-11 and 13-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,884,033 to Duvall et al. in view of US. Patent No. 6,421,781 to Fox et al.

Regarding claims 1, 2, 6, and 18, *Duvall* defines a plurality of unwanted input strings to be filtered (see column 3, line 64 to column 4, line 11), a search pattern that permits variability, can search a portion of the string, and has wildcard characters (see column 6, lines 28-42), receives an input string on a web server (see column 8, lines 18-27), evaluates the strings, and takes remedial action if necessary, including denying the request (see column 6, line 60 to column 7, line 13).

Duvall only discloses the use of the invention for the filtering of URL's that are related to material that is objectionable, depending upon the user's tastes and sensitivities (see column 2, lines 12-20). The filtering of attacks on a system, such as a disclosure attack, integrity attack, or a denial of service attack, is not disclosed.

Fox discloses the parsing and checking of an incoming URL against a list of acceptable domains and variations thereof, and notes that this protects against denial-of-service attacks (see column 11, line 15 to column 14, line 4).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the invention of *Duvall* by checking a URL against domain names, as disclosed by *Fox*, in order to protect against abusive denial-of-service attacks.

As per claims 3 and 19, the patterns described in *Duvall* (see column 6, lines 35-42) constitute a regular expression.

As per claims 4 and 20, *Duvall* discloses that the input string may be a URL (see column 5, lines 66-67).

As per claims 5 and 21, *Duvall* discloses that the input string may be an HTTP verb request, such as a GET request (see column 6, lines 19-25).

As per claims 7-10, 13-16, 26, 27, 29, and 30, *Duvall* discloses that the search patterns may be stored in RAM (see column 3, lines 45-49).

As per claim 11, *Duvall* discloses that the product may be patched onto an application that is already running (see column 9, line 14 to column 11, line 20).

As per claims 17 and 22-25, the program is stored in a public directory (on a disk) before being installed (see column 10, lines 64-66).

As per claim 28, the list of patterns may be edited (see column 8, lines 1-9).

7. Claims 12 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,884,033 to Duvall et al. in view of US. Patent No. 6,421,781 to Fox et al. as applied to claims 7 and 26 above, and further in view of Oliver et al., "Building a Windows NT 4 Internet Server", 1996, p. 203.

The system disclosed in *Duvall* may be implemented on a server and that it uses an API (see column 10, lines 59-63), but *Duvall* and *Fox* do not specifically disclose that it uses ISAPI.

Oliver states that ISAPI (which stands for Internet Server API), which is an API native to the Microsoft® Internet Information Server, allows programmers to create server applications that take advantage of the web server and is tightly linked to the operating system.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the system of *Duvall* and *Fox* by using a reliable and well-supported API such as the Microsoft® ISAPI, as disclosed in *Oliver*, when implementing the system disclosed by *Duvall* and *Fox* on a Windows NT server.

Response to Arguments

8. Applicant's arguments, see Paper No. 9, filed 24 March 2004, with respect to the rejections of claims 1-31 under 35 U.S.C. 102 and 35 U.S.C. 103 have been fully considered and are persuasive in view of Applicant's amendments to the claims. Therefore, the rejection has been withdrawn; it is noted, however, that the content of the

amendments has also caused new grounds of rejection under 35 U.S.C. 112, as stated above. Upon further consideration, new grounds of rejection are made in view of U.S. Patent No. 5,884,033 to Duvall et al. in view of US. Patent No. 6,421,781 to Fox et al. further in view of Oliver et al., "Building a Windows NT 4 Internet Server", 1996, p. 203.

Regarding Applicant's argument that Duvall does not anticipate the use of RAM (see Paper No. 9, p. 16, lines 1-10), it is noted that the location of the relevant material in Duvall that was cited in the previous office actions, column 4, lines 45-49, was in error. The correct location is column 3, lines 45-49. The Applicant is thanked for pointing out the error, and a correction has been incorporated into the new grounds of rejection, above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,442,696 to Wray et al. discloses the use of pseudo-URL's to prevent various kinds of attacks.

U.S. Patent No. 6,678,733 to Brown et al. discloses the use of a proxy to protect against URL attacks.

Berners-Lee et al., RFC 2396, "Uniform Resource Identifiers (URI) : Generic Syntax," 1998, discloses various URL parsing issues and security considerations.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Heneghan, whose telephone number is (703) 305-7727. The examiner can normally be reached on Monday-Thursday from 8:00 AM - 4:00 PM Eastern Time. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse, can be reached on (703) 308-4789.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park 2, 2121 Crystal Drive, Arlington, VA 22202, Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MEH



April 30, 2004



GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100